

Environmental Assessment

Pacheco Water District Lateral 3 Canal Lining Project

July 2012



Mission Statements

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitment to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Table of Contents

Section 1	Introduction	1
1.1 E	Background	1
1.2 N	Need for the Proposal	3
	otential Resource Issues	
1.4 R	Resources Not Analyzed in Detail	4
1.4.1	Cultural Resources	4
1.4.2	Indian Trust Assets	4
1.4.3	Environmental Justice	4
Section 2	Alternatives Including Proposed Action	6
2.1 N	No Action Alternative	6
2.2 P	Proposed Action Alternative	6
Section 3	Affected Environment & Environmental Consequences	8
3.1 A	Air Quality	
3.1.1	Affected Environment	8
3.1.2	Environmental Consequences	9
3.2 V	Vater Resources	10
3.2.1	Affected Environment	10
3.2.2	Environmental Consequences	10
3.3	Groundwater Resources	11
3.3.1	Affected Environment	11
3.3.2	Environmental Consequences	11
	Biological Resources	
3.4.1		
3.4.2	Environmental Consequences	14
	Cumulative Effects	
Section 4	Consultation and Coordination	
4.1 P	Public Review Period	
	Endangered Species Act (16 USC § 1531 et seq.)	
	References	
	List of Figures & Tables	
Figure 1	Project Site Location	1
Figure 2	Proposed Action area.	
Table 3-1	SJVAB Attainment Status and <i>De Minimis</i> Thresholds for Federal Conformity	
	Determinations	
Table 3-2	Estimated Project Emissions	
Table 3-3	Sensitive Species	

List of Acronyms and Abbreviations

APE Area of Potential Effect

CDFG California Department of Fish and Game

CEQ Council on Environmental Quality
CFR Code of Federal Regulations
Delta Sacramento San Joaquin Delta
DOI Department of the Interior
EA Environmental Assessment

FONSI Finding of No Significant Impact

GBP Grassland Bypass Project GDA Grassland Drainage Area

ITA Indian Trust Assets GHG greenhouse gas

NEPA National Environmental Policy Act NHPA National Historic Preservation Act

POC Point of Contact

PWD Pacheco Water District Reclamation Bureau of Reclamation

Service U.S. Fish and Wildlife Service

Section 1 Introduction

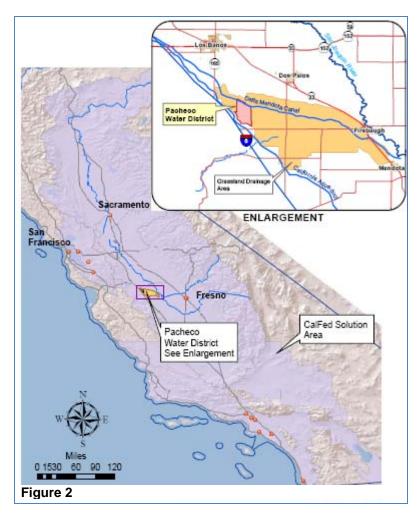
1.1 Background



Figure 1

In conformance with the National Environmental Policy Act of 1969 (NEPA), as amended, the Bureau of Reclamation (Reclamation) has prepared this Draft Environmental Assessment (EA) to evaluate and disclose any potential environmental impacts associated with implementation of the Pacheco Water District's (PWD) Lateral 3 Canal Lining Project (Figure 1). Reclamation proposes to provide a Department of the Interior (DOI) CALFED Bay-Delta Program grant to the PWD to support implementation of the Proposed Action. The CALFED Bay-Delta Program is a 30-year Program (2000-2030) among 25 federal and state agencies with responsibility in the Sacramento San Joaquin Delta (Delta). The Program is

based on four major resource management objectives that guide its actions to achieving a Delta that has a healthy ecosystem and can supply Californians with a reliable water supply. Those objectives are levee system integrity, water quality, water supply reliability and ecosystem restoration. Reclamation plays a key role as the federal lead agency for implementation of water supply reliability actions in coordination with our state CALFED partner agencies.



The Proposed Action consists of providing grant funds for a CALFED Water Use Efficiency Project which would include the lining of three miles of existing earthen channel with an EPDM liner (waterproof flexible liner) to reduce seepage from the PWD's Lateral 3 canal. In addition to the proposed canal lining, new weir boxes and discharge pipes would replace the existing check structures to assure efficient operation of the facilities.

PWD, which encompasses approximately 5,000 acres of productive farmland, is located approximately 10 miles southwest of the community of Dos Palos,

California (Figure 2). PWD lies within the Grassland Drainage Area (GDA) and is a participating agency in the Grassland Bypass Project (GBP), through which, subsurface drain water generated within the region is discharged to the San Joaquin River. Most of the GDA is underlain with a saline perched water table, which is managed with on-farm tile systems and regional deep drains. Deep percolation from irrigation and seepage from unlined canal systems is collected by the tile systems and regional drains, where it is managed and eventually discharged to the San Joaquin River.

Approximately 3,000 acres of the PWD includes subsurface tile drainage systems to manage the perched groundwater and maintain viable agricultural productivity. Tile systems within the PWD contribute an average of 4,000 acre feet of saline subsurface drain water to the GBP annually. This drainage is highly mineralized and contains high levels of dissolved salts, boron, and selenium. The PWD is included in the Westside Regional Drainage Plan, which states the need for source control actions (such as canal lining and irrigation improvements) which provide solutions to reducing drainage discharges from the GDA to the San Joaquin River. The goal ultimately is for all agricultural drainage produced within the GDA to be managed internally resulting in

elimination of all discharge. The Proposed Action would reduce approximately 400 acre feet of seepage into the drainage system annually.

In addition, the Proposed Action would reduce suspended silt and aquatic growth in the canal which would increase the quality of the water delivered to water users. Approximately 1,000 acres of the PWD is irrigated with conventional methods such as surface (either siphon pipe or gated pipe) or movable sprinklers. Although the existing, unlined channel does not prohibit the installation of high-efficiency irrigation systems, the aquatic growth and suspended silt does discourage their installation. By eliminating these issues the Proposed Action is expected to encourage the installation of high-efficiency irrigation systems such as buried drip systems. The Proposed Action would not result in short-term or long-term adverse impacts to water resources.

This EA describes the existing environmental resources in the Proposed Action area, evaluates the effects of the No Action and Proposed Action alternatives on the resources, and proposes measures to avoid, minimize, or mitigate any adverse effects. This EA was prepared in accordance with NEPA, Council on Environmental Quality (CEQ) regulations (40 CFR 1500-1508), and DOI Regulations (43 CFR Part 46). Reclamation has also prepared a Finding of No Significant Impact (FONSI), which explains why the Proposed Action would not have any significant effects on the human or natural environment.

1.2 Need for the Proposal

The CALFED Bay-Delta Program is a 30-year Program (2000-2030) among 25 federal and state agencies with responsibility in the Sacramento San Joaquin Delta. The Program is based on four major resource management objectives that guide its actions to achieving a Delta that has a healthy ecosystem and can supply Californians with a reliable water supply. Those objectives are levee system integrity, water quality, water supply reliability and ecosystem restoration.

The purpose of the Proposed Action is for Reclamation to further the goals and objectives of the CALFED Program as they apply to water supply reliability through management operations within the PWD. Reclamation intends to do so by providing grant funding for lining approximately three miles of existing earthen channel with an EPDM liner reducing seepage losses within the PWD. Currently, the unlined canal loses approximately 400 acre feet per year through seepage to a perched saline sink. The seepage rate of the existing facility is high relative to its size. The lining installed by the Proposed Action would eliminate seepage and allow water to be stored within the canal.

1.3 Potential Resource Issues

This EA will analyze the affected environment of the Proposed Action and No Action Alternative in order to determine the potential impacts and cumulative effects to the following environmental resources:

- Air Quality
- Water Resources
- Groundwater Resources
- Biological Resources
- Cultural Resources
- Indian Trust Assets
- Environmental Justice

1.4 Resources Not Analyzed in Detail

Effects on several environmental resources were examined and found to be minor. Because of this, the following resources were eliminated from further discussion from this EA: Aesthetic Resources; Geology, Global Climate Change; Soils, Seismicity, and Minerals; Hazards and Hazardous Materials; Land Use and Agriculture; Noise; Socioeconomics, Population and Housing; Recreation; Transportation and Circulation; and Utilities, Public Services, and Service Systems.

1.4.1 Cultural Resources

The Proposed Action does not involve the types of activities that have the potential to affect historic properties pursuant to the regulations at 36 CFR Part 800.3(a)(1). Land use would remain unchanged and no new construction or new ground disturbing activities will take place.

In the unlikely event that cultural resources or human remains are identified during the implementation of this project there may be additional considerations pursuant to Section 106 of the NHPA. If inadvertent discoveries of cultural resources or human remains occur during project implementation, work shall temporarily stop and Reclamation cultural resources staff shall be contacted immediately.

1.4.2 Indian Trust Assets

There are no Indian reservations, rancherias or allotments in the project area. The proposed action does not have a potential to affect ITAs. The nearest ITA is a Public Domain Allotment approximately 60 miles northeast of the Proposed Action area.

1.4.3 Environmental Justice

No significant changes in agricultural communities or practices would result from the Proposed Action, other than potential changes to individual irrigation systems. These changes are not likely to affect agricultural employment, which employs a higher

proportion of low-income and minority workers than are employed in the general workforce. Accordingly, the Proposed Action would not have any significant or disproportionately negative impact on low-income or minority individuals within the project area.

Section 2 Alternatives Including Proposed Action

2.1 No Action Alternative

The No Action Alternative would consist of Reclamation not providing grant funding to facilitate water conservation measures at the PWD. Currently the PWD is unable to provide funding to implement this Proposed Action. Therefore, under the No Action Alternative seepage from the unlined Lateral 3 Canal would continue.

The GBP operates under a Waste Discharge permit which regulates the load of selenium that can be released by the PWD. The allocated amount of selenium that the PWD is allowed to discharge is reduced on a yearly basis. Without implementation of drainage control actions, such as the Proposed Action, within the PWD the future load allocations would not meet required state and/or federal compliance standards. Under the No Action Alternative, current water losses through seepage and the PWD's contribution to subsurface drainage to the GDA from the Lateral 3 canal would continue.

2.2 Proposed Action Alternative

The Proposed Action Alternative consists of providing grant funds to support the lining of approximately three miles of existing earthen channel within the Lateral 3 Canal with an EPDM liner to reduce the amount of water lost to seepage. In addition to the proposed canal lining, new precast weir boxes and discharge pipelines would replace the existing check structures to assure efficient operation of the facilities. New turnout and check structures would be added as well. All associated construction activities would occur on existing facilities which are surrounded by irrigated agricultural land.

Construction Activities would include:

- <u>Site preparation:</u> A licensed surveyor would survey the project alignment, develop topographic data for design, and set construction stakes. The existing canal alignment would be dewatered and cleaned of accumulated silt and debris. Existing check structures and turnouts would be removed to allow for placement of the lining. One to three excavators would be used to perform this work and a dump truck would be used to haul removed features from the site.
- <u>Facility Replacement:</u> Precast concrete weir boxes, culverts and canal gate structures would be placed as appropriate. Concrete aprons would be placed around the new facilities so that the liner can be properly anchored.
- <u>Ground Disturbance:</u> The existing channel would be graded to the final design elevations. Anchor trenches (approximately two feet deep and two feet wide) would be cut on either side of the canal.

- Turnout and Check Structure Removal/Replacement: Five existing turnouts would be removed and replaced along the channel, and one new turnout will be added. Two existing check structures would be removed completely. One check structure would be replaced with new precast weir boxes and discharge pipelines, and Check #5 would be removed and relocated to STA. 126+00. Two new check structures with the updated infrastructure would be added.
- <u>Liner Placement:</u> The flexible liner would be placed over the existing canal, with both edges rolled into the anchor trenches on either side. The trenches would be backfilled with the previously excavated material. The liner would be anchored to concrete aprons at each of the turnout and check structures with stainless steel batten strips.
- Post Project Seepage Study: A segment of the canal proposed to be lined would be isolated and filled with water to the normal operating level in order to verify project results. Losses from evaporation, precipitation, and seepage would be measured for 7 to 10 days and compared to the pre-project seepage study. The net difference between the two studies would result in the approximate amount of seepage reduction from the implementation of the Proposed Action.

Construction would begin in October of 2012 and would be completed by December 2012. The post-project seepage study would be conducted and a final report completed by February 2013. The staging area and access route would be restored to pre-project conditions. Avoidance and/or minimization measures developed for the biological resources within the Proposed Action area would be implemented by the PWD. If a federally listed species is encountered during construction, activities shall cease until appropriate corrective measures have been completed or it has been determined that the species will not be harmed.

Section 3 Affected Environment & Environmental Consequences

This section identifies the potentially affected environmental resources and the environmental consequences that could result from the Proposed Action and the No Action Alternative.

3.1 Air Quality

Section 176 (c) of the Clean Air Act (CAA) (42 U.S.C. 7506 (c)) requires that any entity of the Federal government that engages in, supports, or in any way provided financial support for, licenses or permits, or approves any activity to demonstrate that the action conforms to the applicable State Implementation Plan (SIP) required under Section 110 (a) of the CAA (42 U.S.C. 7401 (a)) before the action is otherwise approved. In this context, conformity means that such federal actions must be consistent with a SIP's purpose of eliminating or reducing the severity and number of violations of the National Ambient Air Quality Standards (NAAQS) and achieving expeditious attainment of those standards. Each federal agency must determine that any action that is proposed by the agency and that is subject to the regulations implementing the conformity requirements will, in fact conform to the applicable SIP before the action is taken.

On November 30, 1993, the U.S. Environmental Protection Agency (EPA) promulgated final general conformity regulations at 40 CFR 93 Subpart B for all Federal activities except those covered under transportation conformity. The general conformity regulations apply to a proposed Federal action in a non-attainment or maintenance area if the total direct and indirect emissions of the relevant criteria pollutant(s) and precursor pollutant(s) caused by the Proposed Action equal or exceed certain threshold amounts, thus requiring the Federal agency to make a determination of general conformity.

3.1.1 Affected Environment

The San Joaquin Valley Air Basin (SJVAB) is within the management area of the San Joaquin Valley Air Pollution Control District (SJVAPCD). The SJVAB experiences episodes of poor atmospheric mixing caused by inversion layers formed when temperature increases with elevation above ground, or when a mass of warm, dry air settles over a mass of cooler air near the ground. NAAQS and California Ambient Air Quality Standards (CAAQS) have been established for the following criteria pollutants: carbon monoxide (CO), ozone (O₃), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), inhalable particulate matter between 2.5 and 10 microns in diameter (PM₁₀), particulate matter less than 2.5 microns in diameter (PM_{2.5}), and lead. The CAAQS also set standards for sulfates, hydrogen sulfide, and visibility.

The SJVAB has reached NAAQS and CAAQS attainment status for all criteria pollutants except for O_3 , PM_{10} (CAAQS only), and $PM_{2.5}$. As a result, the emissions of most concern are O_3 (which includes precursors such as volatile organic compounds [VOC]

and nitrogen oxides $[NO_x]$), PM_{10} , and $PM_{2.5}$. Table 3-1 below shows the attainment status and *de minimis* threshold for general conformity for the criteria pollutants of most concern.

Pollutant	Attainment Status ^a	(tons/year)	
VOC (as ozone precursor)	Nonattainment ^d	10 ^b	
NO _x (as an ozone precursor)	Nonattainment ^d	10 ^b	
PM_{10}	Nonattainment (CAAQS) Attainment (NAAQS)	15°	
PM _{2.5}	Nonattainment	100 15°	

3.1.2 Environmental Consequences

3.1.2.1 No Action Alternative

There would be no effect on conditions and trend in air quality within the SJVAB.

3.1.2.2 Proposed Action

Construction emissions would vary from day to day and by activity, depending on the timing and intensity of construction, and wind speed and direction. Generally, air quality impacts from the Proposed Action would be localized in nature and decrease with distance. Ground disturbing activities would result in the temporary emissions of fugitive dust and vehicle combustion pollutants during the following activities:

- earthwork (site preparation, structures removal, channel grading, trenching, compacting, and stockpiling)
- construction equipment and haul truck engine emissions

Calculated emissions from the Proposed Action were estimated using the 2007 URBEMIS software (version 9.2.4), which incorporates emission factors from both the EMFAC2007 and OFFROAD2007 models for reactive organic gases (ROG)¹, NO_x, PM₁₀, and PM_{2.5}. Total project emissions are presented in Table 1-2 below.

¹ The term "volatile organic compounds" are synonymous with "reactive organic gases" for the purposes of this document since both terms refer to hydrocarbon compounds that contribute to ozone formation.

Table 3-2. Estimated Project Emissions ^a					
Pollutant	Construction (tons/year)				
ROG/VOC	0.20				
NO _x	1.56				
PM_{10}	0.72				
PM _{2.5}	0.21				

^a Source: URBEMIS version 9.2.4

As shown in Table 3-2, the Proposed Action has been estimated to emit less than the *de minimis* threshold for NO_x and ROG/VOC as O_3 precursors and $PM_{2.5}$; therefore, a federal general conformity analysis report is not required. In addition, PM_{10} emissions from the Proposed Action have been estimated to be well below the SJVAPCD threshold of 15 tons/year. The estimated emissions for $PM_{2.5}$ and PM_{10} assumes that dust suppression measures, such as applying water to limit fugitive dust, would be implemented. However, if dust suppression measures aren't implemented, the estimated emissions for $PM_{2.5}$ (0.58 tons/year) and PM_{10} (2.47 tons/year) would still be well below the respective thresholds.

3.2 Water Resources

3.2.1 Affected Environment

The PWD receives their water supply from the California Bay-Delta through the California Aqueduct, which is diverted into a main distribution canal and then delivered to the PWD's seven lateral canals. The primary distribution system consists of one mile of concrete lined canal and pipeline. This distribution facility delivers water to the PWD's seven laterals, which in turn, make deliveries to each individual field within the PWD. All seven laterals are unlined ditches with capacities ranging from 15 to 30 cfs. The total lateral length is approximately 19 miles.

Approximately 3,000 acres of the PWD includes subsurface tile drainage systems to manage the perched groundwater and maintain viable agricultural productivity. The majority of the fields within the PWD have been leveled to provide a near-uniform slope which improves surface irrigation efficiencies. Tile systems within the PWD contribute an average of 4,000 acre feet of saline subsurface drain water to the GBP annually. This drainage is highly mineralized and contains high levels of dissolved salts, boron, and selenium.

3.2.2 Environmental Consequences

No Action

Under the No Action Alternative, no changes would occur to the existing operations or the PWD's water resources.

Proposed Action

The Proposed Action would reduce water lost to seepage by lining three miles of existing earthen canal. The Proposed Action is part of the source control component of the

Westside Regional Drainage Plan and would reduce the volume of subsurface drain water discharged through the GBP into the San Joaquin River by reducing the seepage contribution from the PWD's Lateral 3 canal. A seepage study was performed on Lateral 3 in December of 1999 (Appendix A). Land use practices have remained unchanged within the PWD and thus the results from the 1999 study are still applicable. Based on the results of this study, lining the Lateral 3 Canal would reduce the amount of seepage into the drainage system by approximately 400 acre feet per year, reducing the amount of selenium, boron, and salt in the local drainage system.

3.3 Groundwater Resources

3.3.1 Affected Environment

PWD lies within the GDA and is a participating agency in the GBP, through which, subsurface drain water generated within the region is discharged to the San Joaquin River. Most of the GDA is underlain with a saline perched water table, which is managed with on-farm tile systems and regional deep drains. Deep percolation from irrigation and seepage from unlined canal systems is collected by the tile systems and regional drains, where it is managed and eventually discharged to the San Joaquin River.

Approximately 3,000 acres of the PWD includes subsurface drainage systems to manage the perched groundwater and maintain viable agricultural productivity. The majority of the fields within the PWD have been leveled to provide a near-uniform slope which improves surface irrigation efficiencies. Tile systems within the PWD contribute an average of 4,000 acre feet of saline subsurface drain water to the GBP annually. This drainage is highly mineralized and contains high levels of dissolved salts, boron, and selenium. Currently the Lateral 3 canal contributes approximately 400 acre feet per year of subsurface irrigation water into the ground through seepage.

3.3.2 Environmental Consequences

No Action

The current condition of the groundwater resources within the PWD would continue under the No Action Alternative.

Proposed Action

The Proposed Action would line approximately three miles of existing earthen channel reducing seepage by approximately 400 acre feet per year. The reduction in seepage to the local perched water table would reduce the subsurface drain water that is currently discharged to the San Joaquin River. Implementation of the Proposed Action would reduce the pounds of selenium, boron, and salt currently being discharged to the San Joaquin River through the GBP. The Proposed Action would have beneficial impacts to groundwater resources.

3.4 Biological Resources

3.4.1 Affected Environment

For the purpose of this EA, biological resources include vegetation, wildlife, and waters of the United States. The PWD encompasses approximately 5,000 acres of productive farmland. Historically, lands on the valley floor in the vicinity of the PWD likely included prairie grassland, along with alkali sink and saltbush scrub habitat. Some low lying areas may have included wetlands or vernal pools and areas along the San Joaquin River provided riparian habitat. West of the PWD, the Panoche Hills and the base of the Coast Range rise from the edge of the valley floor.

The PWD is entirely an agricultural district producing melons, tomatoes, cotton and asparagus. The terrain is flat and the agriculture practiced is intensive. The crop fields within the Proposed Action area are subdivided by the Lateral 3 canal. The Lateral 3 canal is used to supply irrigation water directly to croplands and is annually excavated, graded, and sprayed for maintenance purposes resulting in the absence of sufficient habitat required to support species that historically might have utilized and/or inhabited the Proposed Action area. In addition, irrigation, maintenance and harvesting occur throughout the surrounding area on an annual basis.

Potential Federally Listed Species in the Proposed Action area

On May 2, 2012, a species list of federally listed, proposed and candidate species potentially occurring within the Proposed Action area and surrounding areas was obtained from the U.S. Fish and Wildlife's (Service) website. The following Table 3-3 includes federally listed species potentially occurring within the Charleston School USGS 7.5-minute Quadrangle, their status, determination of effects from the Proposed Action, and a summary of the rationale supporting the determination.

Scientific Name	Common Name	Federal Status	Effects	Potential habitat utilized by species in Proposed Action Area
INVERTEBRA	TES			
Lepidurus packardi	Vernal pool tadpool shrimp	Е	NE	Absent. No vernal pool habitat in the Proposed Action area. No vernal pool habitat would be disturbed. Water quality of vernal pools would not be affected.
Desmocerus californicus dimorphus	Valley elderberry longhorn beetle	Т	NE	Absent. No suitable habitat in the Proposed Action area. No elderberry shrubs would be disturbed.
AMPHIBIANS				
Ambystoma californiense	California tiger salamander, central population	Т	NE	Absent. No vernal pool habitat or other suitable wetland habitat in the Proposed Action area. No disturbance to wetland habitat or change to water quality of their habitat.
Rana draytonii	California red- legged frog	Т	NE	Absent. Species absent from San Joaquin Valley floor and from vicinity of the Proposed Action area. No suitable habitat in the Proposed Action area. No change to wetland or riparian habitat.
REPTILES				
Gambelia sila	Blunt-nosed leopard lizard	Е	NE	Absent. No suitable habitat in the Proposed Action area. No suitable habitat would be disturbed.
Thamnophis gigas	Giant garter snake	T	NE	Absent. No disturbance to aquatic habitat would occur. There are no records of giant garter snake within the Proposed Action area, and it is extremely unlikely that GGS would use the area as a migratory corridor due to the lack of vegetation in the Proposed Action area. There is no suitable upland habitat for hibernation, and the action would occur during the inactive period for GGS.
MAMMALS				
Dipodomys ingens	Giant kangaroo rat	Е	NE	Absent. No suitable habitat in the Proposed Action area. No suitable habitat would be disturbed.
Dipodomys nitratoides exillis	Fresno kangaroo rat	Е	NE	Absent. Possibly extirpated; no records for this subspecies recorded since 1992. No suitable habitat in the Proposed Action area. No disturbance of suitable habitat.

Vulpes	San Joqauin kit	Е	NE	Absent. No records exist in the Proposed Action
macrotis	fox			area. Closest records on the valley floor are
mutica				mostly old. Those further from the Proposed
				Action area date to the 1990's. Newer records are
				more located in the hills mostly west of Interstate
				5. Avoidance measures would be implemented
				during construction to avoid potential effects to
				San Joqauin kit fox
				-

Key:

- (PE) Proposed Endangered Proposed in the Federal Register as being in danger of extinction (PT) Proposed Threatened Proposed as likely to become endangered within the foreseeable
- (PT) Proposed Threatened Proposed as likely to become endangered within the foreseeable future
- (E) Endangered-Listed in the Federal Register as being in danger of extinction
- (T) Threatened Listed as likely to become endangered within the foreseeable future
- (C) Candidate Candidate which may become a proposed species

3.4.2 Environmental Consequences

No Action

Under the No Action Alternative, current biological resources conditions in the PWD would continue.

Proposed Action

The reduction in the amount of seepage to the local perched water table would reduce the production of subsurface drain water which is currently discharged to the San Joaquin River. The Proposed Action activities would be performed within the footprint of the existing canal and no current land use or PWD's operations would be altered. Lands surrounding the Proposed Action are either actively farmed or contain farm support facilities. The Proposed Action would not disturb or impact any wetlands or habitat and there would not be any discharges to water bodies during the Proposed Action activities. The Proposed Action area is annually excavated, graded, and sprayed for maintenance purposes resulting in the absence of sufficient habitat required to support wildlife species. Based on the habitat requirements of the listed species that could potentially occur within the Proposed Action area, the Proposed Action does not provide suitable habitat for the Vernal pool tadpole shrimp, Valley elderberry longhorn beetle, California tiger salamander (central population), California red-legged frog, Blunt-nosed leopard lizard, Giant kangaroo rat, and the Fresno kangaroo rat. Therefore, these species are not discussed in this section.

Though occurrences of neither sensitive species nor their associated habitats have been observed within the PWD area, an analysis of potential impacts to both giant garter snake and San Joaquin kit fox are discussed below due to the Proposed Action area potentially providing a migratory corridor that could conceivably be utilized by these species. The potential for nesting migratory birds to utilize the Proposed Action area is extremely low due to the lack of vegetation within the Proposed Action area as well as the surrounding area. If presence is determined then appropriate measures would be implemented.

Giant Garter Snake

Giant garter snake inhabits agricultural wetlands and other waterways such as irrigation and drainage canals, sloughs, ponds, small lakes, low gradient streams, and adjacent uplands in the Central Valley (USFWS 1999). Habitat requirements for giant garter snake consist of (1) adequate water during the snake's active season (early-spring through midfall) to provide food and cover; (2) emergent, herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and foraging habitat during the active season; (3) grassy banks and openings in waterside vegetation for basking; and (4) higher elevation uplands for cover and refuge from flood waters during the snake's dormant season in the winter (USFWS 2009).

The Proposed Action area does not provide the above habitat for giant garter snake. Potential impacts to the giant garter snake from the Proposed Action would be a disruption in their migration to or from suitable habitat located outside the PWD. The Proposed Action would avoid this potential disruption by implementing the Proposed Action activities during the non-migratory season (October 2-April 30) when giant garter snakes are dormant. Since the Proposed Action area does not provide habitat for giant garter snakes, but could potentially provide a migratory corridor utilized by the species, limiting construction activities to the inactive period would avoid the potential for impacts. The Proposed Action area would be restored to pre-project conditions and, therefore, no indirect effects would occur as a result of the Proposed Action. Reclamation has determined that the Proposed Action would have no effect on giant garter snake. If a snake is encountered during construction, activities shall cease until appropriate corrective measures have been completed or it has been determined that the snake will not be harmed.

San Joaquin kit fox

Kit fox are an arid-land-adapted species and typically occur in desert-like habitats in North America. Such areas have been characterized by sparse or absent shrub cover, sparse ground cover, and short vegetative structure. The subspecies historically ranged in alkali scrub/shrub and arid grasslands throughout the level terrain of the San Joaquin Valley floor from southern Kern County north to Tracy in San Joaquin County, and up into more gradual slopes of the surrounding foothills and adjoining valleys of the interior Coast Range. Within this range, the kit fox has been associated with areas having open, level, sandy ground that is relatively stone-free to depths of about 3 to 4.5 feet. The San Joaquin kit fox utilizes subsurface dens, which may extend to 6 feet or more below ground surface, for shelter and for reproduction. Kit fox subspecies are absent or scarce in areas where soils are shallow due to high water tables, impenetrable hardpans, or proximity to parent material, such as bedrock. The kit fox also does not den in saturated soils or in areas subjected to periodic flooding. Reproductive success appears to be correlated with prey abundance.

Terrestrial habitat in the PWD is intensively managed for agriculture and the landscape is highly disturbed (e.g. through land preparation, planting, irrigation and harvesting). Areas that are not cropped are kept barren and free of weeds, limiting areas for potential prey

species. These conditions limit invertebrate prey, which are relatively scarce in crop fields. There are few opportunities for rodents to burrow in fields and for burrows to persist because of frequent irrigation practices. Pests such as California ground squirrel (*Spermophilus beecheyi*) are controlled and little evidence of burrowing activity by other rodents occurs in the Proposed Action area. Because burrowing mammals are not present in the area, the availability of shelter within the Proposed Action area is unlikely. The Proposed Action area does not provide suitable habitat for potential prey (such as kangaroo rats) due to the high intensity agriculture practices within the PWD and surrounding lands. In addition, the Proposed Action area would be restored to pre-project conditions and, therefore, no indirect effects would occur as a result of the Proposed Action

The project may impact the kit fox if an individual used the canal as a migratory corridor during construction. Therefore, the following avoidance and minimization measures will be followed to avoid adverse affects.

All project-related vehicle traffic will be restricted to established roads, construction areas, and other designated areas. In order to reduce impacts by project-related vehicles, workers will observe the following:

- Maintain a daytime speed of 20-mph throughout the site
- Minimize construction to the extent possible at night and when kit foxes would be most active.

Inadvertent entrapment will be prevented via the following activities:

- Cover all excavated, steep-walled holes or trenches more than 2-feet deep with plywood or similar materials at the close of each working day.
- Construct one or more escape ramps of earthen-fill or wooden planks if the trenches cannot be closed.
- Thoroughly inspect all construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site overnight before the pipe is subsequently buried, capped or otherwise used in any way.
- All food-related trash items will be disposed of in securely closed containers and removed at least once a week from the project site.

An employee education program will be conducted by a qualified biologist consisting of a brief presentation in kit fox biology and legislative protection to explain endangered species concerns to contractors, their employees, and agency personnel involved in the project. The program will include a description of the San Joaquin kit fox and its habitat needs, an explanation of the status of the species and its protection under the Endangered Species Act, and a list of measures being implemented to avoid and minimize the chance of impacts to the species during project construction and implementation. A fact sheet conveying this information will be provided to project personnel.

Although the Proposed Action area does not contain the necessary habitat for the San Joaquin kit fox, it is conceivable that they could utilize the PWD as a movement corridor. With implementation of the previously described avoidance and minimization measures for the San Joaquin kit fox, Reclamation has determined that the Proposed Action may affect, but is not likely to adversely affect the San Joaquin kit fox.

The Proposed Action would not result in a significant change in the surrounding environment and would not result in short-term or long-term adverse impacts to biological resources. However, by reducing the seepage contribution to the local perched water table, the Proposed Action would reduce the subsurface drain water that is currently discharged to the San Joaquin River, thus providing potential habitat benefits.

3.5 Cumulative Effects

According to the CEQ regulations for implementing the procedural provisions of NEPA, a cumulative impact is defined as the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.

There are no adverse impacts associated with implementing the Proposed Action, and therefore there are no cumulative effects to consider.

Section 4 Consultation and Coordination

4.1 Public Review Period

Reclamation intends to sign a Finding of No Significant Impact for this project, and will make the EA available for a two week period from July 30 to August 13, 2012. All comments will be addressed in the FONSI. Additional analysis will be prepared if substantive comments identify impacts that were not previously analyzed or considered.

4.2 Endangered Species Act (16 USC § 1531 et seq.)

Section 7 of the Endangered Species Act requires Federal agencies to ensure that discretionary federal actions do not jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of the critical habitat of these species. Reclamation provided an email to the Service on March 23, 2012 outlining our intent to make a no effect determination for the Giant Garter Snake. Reclamation will also send a memo to the Service requesting concurrence with a may affect, not likely to adversely affect determination for the San Joaquin Kit Fox based on implementation of the avoidance measures presented previously in Section 3.4.2.

Section 5 References

- U.S. Fish and Wildlife Service (USFWS). 1999. Draft Recovery Plan for the Giant Garter Snake (Thamnophis gigas). Portland, Oregon. Ix+ 192 pp.
- U.S. Fish and Wildlife Service (USFWS). 2009. Species Account. Giant Garter Snake. U.S. Fish and Wildlife Service. May 13, 2009.
- U.S. Fish and Wildlife Service (USFWS 2012). List of Species that Potentially Occur within USGS 7.5- minute Charleston School Quadrangle. Website accessed on May 2, 2012.